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4316/019

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s) : LI et al.  
Serial No. : 09/945,342  
Filing Date : August 31, 2001  
Examiner : BOYD, Jennifer  
Title : DISPOSABLE ABSORBENT  
PAD FOR LIQUID WASTE  
COLLECTION  
Group Art Unit : 1771

DECLARATION OF RALPH MOORHOUSE

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

I, Ralph Moorhouse, hereby state as follows:

1. I am President of Hydrocolloid Solutions, LLC of Houston, Texas, which provides consulting and expert services to industries that produce or utilize hydrocolloids.

2. As can be appreciated from a review of my CV, attached hereto, I have substantial technical expertise with respect to the chemistry, properties, manufacture and marketing of natural and biosynthetic water-soluble polymers. Such expertise is in the areas of polysaccharide and carbohydrate chemistry,

fermentation/microbiology, food systems, fluid systems, slurry systems, and oil related applications.

3. My education includes receipt of a Bachelors of Science degree from Liverpool Polytechnic, a Ph.D. from the University of Aston, and post-doctoral research at Purdue University. My educational training focused on physical and organic chemistry, biochemistry, and, in particular on polymer chemistry.

4. I have been retained by the Hartz Mountain Corporation, the owner of the above-referenced application, as an expert and have been asked to opine on whether the subject matter of the application is taught by the prior art.

5. I understand that the subject patent application is directed to a disposable absorbent article, such as a waste collection pad. This article or pad includes a liquid permeable top sheet and a liquid impermeable back sheet. The pad also includes an absorbent layer disposed between the top sheet and the back sheet. The absorbent layer includes super absorbent polymer (SAP) granules, which are adhered to the back sheet. According to the description in the application, when liquid excrement from animals (which contains alkaline ammonia) is applied to the article or pad, it immediately reacts with the SAPs to form a solid gel-like product, thereby preventing leakage. Specifically, the SAPs chemically bond with the alkaline liquid excrement in order to form a neutralized salt. As a result, odor related to the presence of untreated urine is virtually eliminated.

6. Significantly, and in accordance with the description in the application, the SAPs of the inventive pad are acidic so that ammonia in the liquid excrement

or urine is absorbed and neutralized by the SAPs, thereby substantially reducing, if not eliminating, any odor.

7. It is my understanding that the Patent Office Examiner has rejected the application based primarily on the teaching in U.S. Patent No. 6,491,993 to Forbes (the Forbes patent). The Examiner evidently argues that Forbes teaches the waste collection pad for food products assembled in the subject application, except for the feature that the super absorbent polymer is acidic, and the Examiner therefore relies on a combination of teachings in Forbes and a second patent reference, U.S. Patent No. 5,433,994 (the "McKinney patent") in teaching the use of acidic super-absorbent particles as taught in McKinney in the product of Forbes. It is my professional opinion that this position of the Examiner is not correct.

8. Specifically, it is my professional view that it would not be obvious to combine the teaching of Forbes with McKinney. While McKinney describes acidic super absorbent polymers, such SAPs would not be suitable in the Forbes product.

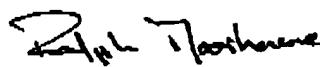
9. In reading the Forbes patent, it is apparent that Forbes discloses absorbent pouches which are used to absorb juices/liquids generated from various food items such as meat, fish and poultry. Thus, Forbes teaches away from combining its absorbent pouch with SAPs that are acidic since items such as meat fish and poultry are themselves acidic, having a pH of less than 7. Indeed, the pH of beef, fish and poultry is within the acidic pH range of 3.5-5.5. Therefore, acidic SAPs could not possibly effectively absorb fluids from such products. Instead, for neutralization to occur, the pouches taught by Forbes

would actually require basic SAPs to accomplish both neutralization and fluid absorption. Indeed, combining Forbes with McKinney would make no sense since Forbes teaches basic SAPs which absorb merely 20-30 times their weight, whereas McKinney utilizes acidic SAPs that absorb up to 800 times their weight. Thus it is my opinion that acidic SAP's are ineffective in the Forbes patent.

10. Accordingly, and contrary to the position of the Patent Office Examiner, the teaching of Forbes precludes combining it with that of McKinney. Stated succinctly, acidic SAPs would not be suitable for the absorbent pouches described in the Forbes patent.

I hereby state that all statements made herein are true and all statements made on information and belief are believed to be true.

By:



Ralph Moorhouse

Dated: March 10, 2005

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# Ralph Moorhouse

Digitally signed by Ralph Moorhouse  
DN: CN = Ralph Moorhouse, C = US, O = Hydrocolloid  
Solutions LLC  
Reason: I am the author of this document  
Date: 2005.03.10 20:57:09 -06'00'

**Hydrocolloid Solutions, LLC****Ralph Moorhouse, Ph.D., B.Sc. (Hons) - PRESIDENT, Hydrocolloid Solutions LLC****OVERVIEW:**

**Technical Expertise:** Recognized authority on the chemistry, properties, manufacture & markets for natural and biosynthetic water-soluble polymers. Specific expertise includes:

- Products: *Polysaccharides from plants (e.g. guar), seaweed (e.g. alginates), and microbial sources (e.g. xanthan). Organophilic clays. Transition metal & borate crosslinkers*
- Technologies: *Polysaccharide and carbohydrate chemistry, fermentation/microbiology, food systems, fracturing fluid systems, hydrocarbon & 'green' oil based slurry systems. General analytical techniques. Hands-on field experience (oilfield).*
- Markets: *Oilfield, food, personal care, and general industrial applications.*

**Business Experience:** Technology & business responsibilities in the Specialty Chemical & Biotechnology industries focusing on water-soluble polymers. Employment experience has encompassed development & implementation of business & technological strategies using a market driven approach to develop & commercialize new products & develop new markets for existing products in oilfield & industrial markets.

**EMPLOYMENT****Hydrocolloid Solutions, LLC, Houston, TX.**

2000 to date

**President**

Provide consulting and expert services to industries that produce or utilize hydrocolloids. Particular focus on food and industrial/oilfield markets

- Market survey's for various chemicals and hydrocolloids
- Marketing plan and implementation for hydrocolloid sales into Oilfield markets.
- Process development/improvement projects with hydrocolloid manufacturers
- Close interactions with suppliers of hydrocolloid to oilfield and other markets to generate new or expansion of existing markets.
- Qualification of new products or product sources for oilfield, industrial and food applications
- Expert panel member for several Generally Recognized As Safe (GRAS) self affirmation processes (process for approval of product use in foods).
- Data & information development for GRAS self affirmation process.
- Expert witness services for patent litigation.
- Taught hydrocolloid chemistry/functionality, physical properties, and uses to new/existing hydrocolloid producers and end-users

**Benchmark Research & Technology, Specialty Chemicals (Oilfield & Industrial),**

1996 to 2000

**Director of Research**

- Managed R&D and QC programs for guar, organophilic clays and crosslinkers for oilfield and industrial applications
- Developed new family of products for oil well fracturing market utilizing guar & organophilic clay technologies (liquid slurries for service companies), resulting in \$10-12M in new business per annum.
- Developed novel guar derivatization processes.

## *Hydrocolloid Solutions, LLC*

- Developed new and improved existing borate & transition metal crosslinker formulations for use with guar & guar derivatives.
- Developed new industrial markets for guar & crosslinker products.
- Provided 'on-location' technical support for pumping services companies.
- Established strong links with guar supplier on the sub-continent.

**Rhône-Poulenc (now Rhodia) Inc, Guar/xanthan manufacturer/Specialty Chemicals. 1990 to 1996**  
**Applications Development Manager, Water-Soluble Polymers**

Managed eight professionals & \$1M budget

- Developed & commercialized new derivatized guar product (9 mths) with a 0.5M+ lb. new business potential/year with one customer & 3M+ lb. potential/year industry-wide (Oilfield).
- Directed project to develop new derivatized guar product, which generated 15% additional sales in 1<sup>st</sup> year of commercialization. (Oilfield)
- Directed program to reduce plant costs for a specific guar product line by 40%.
- Spearheaded program to develop xanthan/guar combinations offering significant cost/performance benefits; \$300K new sales in '94.
- Company resource for properties of major hydrocolloids. Specialty areas included, rheological characterization and interactions.
- Acted as worldwide focal point for two xanthan/succinoglycan customer support.
- Initiated and developed relationships with customers resulting in the introduction of two new guar and xanthan products lines in '94 and one in '95.
- Provided responsive technical service to support sales/marketing.
- Core member of steering committee to define business, production & technical direction for xanthan gum product-line, worldwide.
- Delivered new & existing product presentations to customer technical & marketing groups.

**Kelco, Div. of Merck & Co., Inc (now CP-Kelco).** 1977 to 1990  
**Research Fellow**

Responsible for developing new biopolymer products & processes. Managed 4 professionals with \$0.5M budget.

- Developed unique, high value xanthan gum for niche industrial market (\$300K annual sales).
- Directed program for the development of xanthan gum for food applications (\$5M+ new business/year).
- Shared leadership of inter-departmental task force (50 people) to implement a process gellan gum for food applications – reached goal 3 months ahead of schedule.
- Lead task force to rapidly identify and correct functionality problems with a line-product (welan).
- Generated new biogum applications for Food, Industrial & Oilfield markets.
- Developed standard test protocols.
- Trained in food, oilfield and industrial applications of biogums, galactomannan and seaweed hydrocolloids.
- Interacted closely with sales/marketing and production personnel.
- Company interface with academic contacts and consultants

**Purdue University, W. Lafayette, IN.** 1975-77  
**Research Associate**

- Post-doctoral studies on the molecular structure of polysaccharides; published pioneering studies on xanthan gum and other microbial polysaccharides.

**Hydrocolloid Solutions, LLC****Unilever Research, Bedford, UK.****1968-75****Snr. Research Assistant**

- Conducted basic research into the physico-chemical properties of a wide variety of polysaccharides, with utility in food and personal care applications.
- Completed Ph.D. while holding fulltime job (3 years).

**EDUCATION**

Ph.D., University of Aston, Birmingham, UK

B.Sc. (Hons.), Liverpool Polytechnic, Liverpool, UK

Post-doctoral Research, Purdue University, W. Lafayette, IN.

**MEMBERSHIPS**

American Chemical Society; Institute of Food Technologists; Society of Petroleum Engineers.